

**From:** [Blend, Jeff](#)  
**To:** [Greeley, Carrie](#)  
**Subject:** FW: Nutrient analysis  
**Date:** Wednesday, April 02, 2014 10:25:51 AM

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Carrie:

Per John North's instructions below, I sent you an electronic copy of the Small Business Impact Analysis for the Nutrient Criteria and cover letter. I also put paper copies on your desk and initialed the cover letter. Let me know if that was not correct, or if I need to do something else. Thanks.

Jeff

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**From:** North, John  
**Sent:** Tuesday, April 01, 2014 4:52 PM  
**To:** Blend, Jeff  
**Subject:** RE: Nutrient analysis

I think it's enough. Go ahead and initial the memo and get the memo and analysis to Carrie Greeley before 5:00.

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**From:** Blend, Jeff  
**Sent:** Tuesday, April 01, 2014 1:52 PM  
**To:** North, John  
**Subject:** Nutrient analysis

Not sure if this is enough. I kept it to two sentences. Also attached is the analysis with your one final change.

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Helena, MT 59620-0901



**MEMO**

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TO: Board of Environmental Review

FROM: Jeff Blend, Economist

DATE: April 1, 2014

SUBJECT: Small Business Impact Analysis for MAR Notice No. 356

Attached is a Small Business Impact analysis for MAR Notice No. 356. This analysis fulfills the statutory obligations of Senate Bill 139 passed in the 2013 Legislature, which requires an analysis of the direct impacts to small businesses from a new rule.

**From:** [Blend, Jeff](#)  
**To:** [Greeley, Carrie](#)  
**Subject:** Small business Impact Study for Nutrients  
**Date:** Wednesday, April 02, 2014 10:05:43 AM  
**Attachments:** [Small Business Impacts from Nutrient Rule\\_JNedits.docx](#)  
[NutrientEEconAnalCover.doc](#)

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## Small Business Impact Analysis of the Nutrient Standards Rule

The Nutrient Standards Rule (MAR Notice No. 17-356, Circular DEQ 12A) and Variance Rule (MAR Notice No. 17-355, Circular 12B) will significantly and directly impact a couple of small businesses in the state of Montana. For the purposes of this study, small businesses are defined as less than 50 employees. An estimated two existing small businesses will see larger cost impacts from having to meet higher water quality standards. These two businesses are located in a small town and rural area in Montana. The two businesses that might have to upgrade would likely experience significant impacts from the rule.

### Impacts

#### Direct Costs to Two Existing Small Businesses to Meet WERF Level 2 and Level 3<sup>1</sup>

Out of the thousands of businesses in Montana, about 50 were identified as ones that would be affected directly by the nutrient criteria. This identification was done in the document entitled, “ Demonstration of Substantial and Widespread Economic Impacts to Montana That Would Result if Base Numeric Nutrient Standards had to be Met by Entities in the Private Sector in 2011/2012”. Included were businesses that have a discharge permit into state waters, and are not otherwise hooked up to a municipal system. Therefore, the numeric nutrient water quality standards only apply to those few business entities that have a surface water discharge permit and treat their own water. Out of these 50 businesses, only about 4 or 5 would qualify as small businesses (less than 50 employees) that would be directly affected by this rule. Indeed, most of the 50 businesses are mines, refineries, natural gas companies and other large entities over 50 employees. Only two very small businesses out of the four were found to have treatment levels that do not currently meet WERF Level 2 and thus the general variance level allowed at this time under the Variance rule. Thus, only two existing small businesses in Montana would likely have to upgrade their self-owned wastewater treatment systems to meet WERF 2 (or find alternative forms of water disposal). The other two or three small businesses were estimated to be already meeting WERF level 3 and 4, or meeting higher standards than the general variance.

DEQ examined the wastewater permits and the Statement of Basis for these 2 affected businesses. These records are located within DEQ’s Permitting Division. Current effluent nutrient levels and estimates of current treatment costs at the two businesses were compared to costs that would be needed to meet WERF levels 2 and 3 based on the WERF study. In this way, annual capital and operations costs needed for meeting base nutrient criteria (above current nutrient treatment costs) were applied to each business.

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<sup>1</sup> Much of this section is taken from From ‘Demonstration of Substantial and Widespread Economic Impacts to Montana That Would Result if Base Numeric Nutrient Standards had to be Met by Entities in the Private Sector in 2011/2012’

Costs are under-estimated for small facilities and those with low flows, because the WERF cost data was multiplied by effluent flow providing a linear cost estimate based on flow. Clearly, there will be a minimum capital cost of treating to WERF level 2 for facilities with small flows such as pouring concrete, hiring labor, etc. that is greater than the linear cost estimates for these low-flow and small facilities. Thus, we multiply the WERF cost numbers by 5 to account for a lack of economies of scale in these two businesses.

An analysis of the life-cycle costs for a number of technologies used to control nitrogen and phosphorus in wastewater treatment plants estimated that labor costs are between 15-21 percent of the annualized capital costs for nitrogen and 15-48 percent of annualized capital costs for phosphorus to treat nutrients (Kang and Omstead, 2011).<sup>2</sup> Thus, we add the addition of the high estimate of labor costs (48 percent additional costs annually) as a percentage of capital costs were considered across each scenario.

The two businesses were assumed to be at WERF Level 1 which suggests little or no nutrient treatment. The businesses were calculated to have annual costs of \$6,700 and \$1,500 annually to meet WERF level 2. These figures were calculated from numbers found in the DRAFT Interim WERF study *“Striking the Balance Between Wastewater Treatment Nutrient Removal and Sustainability, Considering Capital and Operating Costs, Energy, Air and Water Quality and More”* (Falk, et al., 2011a). Because these businesses have such small outflows, these business might choose to either find an alternative discharge method (that is not into a state water), apply for an individual variance or perhaps change some operating procedures rather than investing in the capital expenditures to reach WERF level 2.

If the two businesses did invest in the equipment to get to WERF level 2, the \$6,700 and \$1,500 numbers for annual expenditure are probably significantly underestimated because the WERF numbers were for larger businesses with economies of scale. If we take into account economies of scale, it might be reasonable to multiply these numbers by a factor of 5. If we add 48 percent for labor costs on to this multiple of 5, then the numbers would be about \$49,500 and \$11,000 annually for these two businesses to reach WERF level 2. It is not clear how far beyond WERF level 2 these businesses would have to go as time goes on. These annual costs could effectively harm or shut down these two businesses. Thus, it is likely that both businesses would apply for an individual variance or find an alternative discharge method to avoid substantial impacts and these annual costs.

For the two businesses (one located in Madison County and the other in the northern Powder River Basin), non-discharge options include, a. land application, b. total/seasonal retention, c. piping water long distances away from state waters or to larger state waters with dilution, and d. trading. These non-discharge options, including land application, could be expensive or might not be feasible in certain areas (such as places far from open land or with few trade partners) or during the cold months.

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<sup>2</sup> Based on information in: Introduction of Nutrient Removal technologies Manual, EPA, 2008 and WEF/WERF Cooperative Study of Nutrient Removal Plants: Achievable Technology Performance Statistics for Low Effluent Limits)

As noted above, these two affected businesses are located in or near small towns. Since most small towns do not have diverse economies, even a small decrease in business and in population can have a large effect on them. For example, some small Montana towns have less than 10 businesses total (e.g. Fromberg, MT).

There would be paperwork and other reporting tasks and sampling costs that the two small businesses directly affected would have to undertake in meeting the nutrient standards rule. It is difficult to say what these costs would be, but water sampling could be the largest cost along with extra time needed to comply. The other two or three business that already meet general variance standards would also have additional paperwork to comply with in their water discharge permit, although probably not significantly more than the current paperwork.

New small businesses with new wastewater discharges that want to located in Montana could also be affected greatly by the Nutrient Standards rule and may need to install water treatment technologies up to the Limits of Technology (stricter than the general variance) due to Non-Degradation rules. Some new businesses may choose to not locate in Montana if they were required to be in compliance immediately, while other states may not have this requirement. Eventually, all U.S. states will have to meet nutrient criteria, so this effect will probably decline over time.

The multiplier effects from the two small businesses directly affected would be minimal for the state as a whole and could be significant to the small towns where they are located.

## Appendix A: Company Sizes

Matt Betcher of the Montana Department of Labor and Industry, Research and Analysis Bureau, entered the size classes of the businesses from the approximately 50 affected businesses (that have discharge permits) studied in the 'Demonstration of Substantial and Widespread Economic Impacts to Montana That Would Result if Base Numeric Nutrient Standards had to be Met in 2011/2012'. The obvious large businesses greater than 50 employees were not looked at, but businesses that might be under 50 employees were looked at by Mr. Betcher. He was able to find ranges of numbers of employees for these businesses using an alpha search of business names. The size classes are based on the average employment over last year of Quarterly Census of Employment and Wages (QCEW) data. Jeff Blend looked up the companies that were not in that database.

Quarterly Census of Employment and Wages is found at: <http://www.bls.gov/cew/>

## Appendix B-Small Business Statute

<http://openstates.org/mt/bills/2013/SB139/documents/MTD00006286/>

### **2013 Montana Legislature, SENATE BILL NO. 139, INTRODUCED BY E. WALKER**

**NEW SECTION. Section 1. Small business impact analysis -- assistance.** (1) Prior to the adoption of a proposed rule, the agency that has proposed the rule shall determine if the rule will adversely or positively impact small businesses. If the agency determines that the proposed rule will impact small businesses, the determination must be published in the register when the proposed rule is published. If the agency determines that the proposed rule may have an adverse or positive impact on small businesses, the agency shall prepare a small business impact analysis that, at a minimum, must:

- (a) identify by class or group the small businesses probably affected by the proposed rule;
  - (b) include a statement of the probable adverse or positive effects of the proposed rule on the small businesses identified in subsection (1)(a); and
  - (c) include a description of any alternative methods that may be reasonably implemented to minimize or eliminate adverse effects described in subsection (1)(b), while still achieving the purpose of the proposed rule.
- (2) The agency shall provide documentation for the estimates, statements, and descriptions required under subsection (1).
- (3) The office of economic development, established in 2-15-218, shall advise and assist agencies in complying with this section.

**Section 2.** Section 2-4-102, MCA, is amended to read:

**"2-4-102. Definitions.** For purposes of this chapter, the following definitions apply:

(1) "Administrative rule review committee" or "committee" means the appropriate committee assigned subject matter jurisdiction in Title 5, chapter 5, part 2.

(2) (a) "Agency" means an agency, as defined in 2-3-102, of state government, except that the provisions of this chapter do not apply to the following:

(i) the state board of pardons and parole, except that the board is subject to the requirements of 2-4-103, 2-4-201, 2-4-202, and 2-4-306 and its rules must be published in the ARM and the register;

(ii) the supervision and administration of a penal institution with regard to the institutional supervision, custody, control, care, or treatment of youth or prisoners;

(iii) the board of regents and the Montana university system;

(iv) the financing, construction, and maintenance of public works;

(v) the public service commission when conducting arbitration proceedings pursuant to 47 U.S.C. 252 and 69-3-837.

(b) The term does not include a school district, a unit of local government, or any other political subdivision of the state.

(3) "ARM" means the Administrative Rules of Montana.

(4) "Contested case" means a proceeding before an agency in which a determination of legal rights, duties, or privileges of a party is required by law to be made after an opportunity for hearing. The term includes but is not restricted to ratemaking, price fixing, and licensing.

(5) (a) "Interested person" means a person who has expressed to the agency an interest concerning agency actions under this chapter and has requested to be placed on the agency's list of interested persons as to matters of which the person desires to be given notice.

(b) The term does not extend to contested cases.

(6) "License" includes the whole or part of an agency permit, certificate, approval, registration, charter, or other form of permission required by law but does not include a license required solely for revenue purposes.

(7) "Licensing" includes an agency process respecting the grant, denial, renewal, revocation, suspension, annulment, withdrawal, limitation, transfer, or amendment of a license.

(8) "Party" means a person named or admitted as a party or properly seeking and entitled as of right to be admitted as a party, but this chapter may not be construed to prevent an agency from admitting any person as a party for limited purposes.



(9) "Person" means an individual, partnership, corporation, association, governmental subdivision, agency, or public organization of any character.

(10) "Register" means the Montana Administrative Register.

(11) (a) "Rule" means each agency regulation, standard, or statement of general applicability that implements, interprets, or prescribes law or policy or describes the organization, procedures, or practice requirements of an agency. The term includes the amendment or repeal of a prior rule.

(b) The term does not include:

(i) statements concerning only the internal management of an agency or state government and not affecting private rights or procedures available to the public, including rules implementing the state personnel classification plan, the state wage and salary plan, or the statewide accounting, budgeting, and human resource system;

(ii) formal opinions of the attorney general and declaratory rulings issued pursuant to 2-4-501;

(iii) rules relating to the use of public works, facilities, streets, and highways when the substance of the rules is indicated to the public by means of signs or signals;

(iv) seasonal rules adopted annually or biennially relating to hunting, fishing, and trapping when there is a statutory requirement for the publication of the rules and rules adopted annually or biennially relating to the seasonal recreational use of lands and waters owned or controlled by the state when the substance of the rules is indicated to the public by means of signs or signals; or

(v) uniform rules adopted pursuant to interstate compact, except that the rules must be filed in accordance with 2-4-306 and must be published in the ARM.

(12) (a) "Significant interest to the public" means agency actions under this chapter regarding matters that the agency knows to be of widespread citizen interest. These matters include issues involving a substantial fiscal impact to or controversy involving a particular class or group of individuals.

(b) The term does not extend to contested cases.

(13) "Small business" means a business entity, including its affiliates, that is independently owned and operated and that employs fewer than 50 full-time employees.

~~(13)~~(14) "Substantive rules" are either:

(a) legislative rules, which if adopted in accordance with this chapter and under expressly delegated authority to promulgate rules to implement a statute have the force of law and when not so adopted are invalid; or

(b) adjective or interpretive rules, which may be adopted in accordance with this chapter and under express or implied authority to codify an interpretation of a statute. The interpretation lacks the force of law."